



Review Article

Hong Kong J Obst Gynae
ISSN (e): 2663-8088
ISSN (p): 2663-8177
2019; 2(1): 03-05
© 2019, All rights reserved
www.gynaecologyresearch.com

Polycystic Ovarian Syndrome (PCOS)- An emerging epidemic in young females

Richu Grover, Neeraj Arora, Pankaj Srivastava³

¹ Associate Professor, Department of Obstetrics and Gynecology, Rama Medical College and Research Hospital, Mandhana, Kanpur-221007, Uttar Pradesh, India

² Associate Professor, Department of Anesthesia, Rama Medical College and Research Hospital, Mandhana, Kanpur-221007, Uttar Pradesh, India

³ MS, Department of Surgery, Om Surgical Center & Maternity Home, Varanasi, Uttar Pradesh, India

Abstract

Polycystic Ovarian Syndrome (PCOS) is an upcoming endemic in today's era. Primarily an ovarian syndrome, it has multiple involvements. If left uncontrolled it can lead to significant morbidity later in life. This article reviews the clinical features, diagnostics and treatment for PCOS.

Keywords: PCOS, Clinical features, Diagnostics, Treatment complications.

INTRODUCTION

PCOS stands for polycystic ovarian syndrome. It has many physical, mental and related issues attached to it. It can lead to significant morbidity later in life. This article reviews the clinical features, diagnosis and treatment for PCOS.

PCOS was first described in 1905 by Stein Leventhal as a syndrome consisting of amenorrhea, hirsutism and obesity in association with enlarged ovaries.

1. Presently Rotterdam criteria best defines PCOS as the presence of 2 out of 3 features which are - Hyperandrogenism (Clinical and or biochemical signs of hyperandrogenism)
2. Oligo / anovulation
3. Polycystic ovaries on scanning with TVS follicle no per ovary > 12 or ovarian volume > 10ml with TVS ovarian volume >10ml.

Based on these criteria Rotterdam gave 2 phenotypes -

1. Ovulatory females with polycystic ovaries and hyperandrogenism.
2. Oligo/Anovulatory females with polycystic ovaries without hyperandrogenism.

Clinical Features

1. Menstrual Irregularities: It is most common symptom which brings the female to a gynecological clinic. It is irregular or unpredictable menstrual cycle. It could be amenorrhea/oligomenorrhea.
2. Signs of hyperandrogenesis: Unwanted hair growth development.
3. Infertility: It is found in about 30-50% of PCOS patients.
4. Recurrent first trimester miscarriages.
5. Weight gain: Sudden gain over 6-12 month. This is primarily abdominal. History: Family history of type 2 DM is more common in PCOS patients.

***Corresponding author:**

Dr. Richu Grover

Associate Professor, Department of Obstetrics and Gynecology, Rama Medical College and Research Hospital, Mandhana, Kanpur-221007, Uttar Pradesh, India

Email:
mailtorichu12@gmail.com

Clinical examination

1. Hirsutism: It is determined by visual scoring method which involves abnormal hair growth (i.e. upper lips, chin, chest, upper abdomen, lower abdomen, upper back, lower back, upper arms and thighs).

2. Acne

3. Obesity: It is found in 60% of adults with PCOS. There is increase in waist to hip ratio. This feature is less common in adolescents.

4. Acanthosis Nigricans

5. Scalp hair loss/alopecia

6. Depression

Laboratory Evaluation

[1] UPT – Urine pregnancy test in females with a history of amenorrhea.

[2] TSH, S-prolactin, 17-OH Progesterone, S. Testosterone [Testosterone in PCOS < 150ng /dl, > 200 ng/dl indicates ovarian /adrenal tumor]

DHEA [DHEA may be normal or slightly increase > 800 ug/dl in adrenal tumor] LH/FSH ratio [LH /FSH ratio > 2.0 suggestive of PCOS]

[3] Insulin Resistance detected by

a. Fasting glucose /Insulin Ratio < 4.5

b. 75gm oral glucose tolerance test.

[4] Triglyceride and cholesterol levels (HDL) they are usually high

Radiological Findings

TRANSVAGINAL ULTRASOUND IS PREFERRED.

In PCOS there is presence of > 10 cysts measuring 2-8 mm around a dense core of stroma or scattered with an increase amount of stroma. According to ESHRE 2003, PCO is present when

1. One or both ovaries demonstrate > 12 follicles measuring 2-9mm in diameter arranged peripherally (Necklace pattern).

2. The ovarian volume > 10cm³.

One of the earliest noted characteristics is increase in stromal echogenicity.

Treatment

[1] **Diet modification:** Optimal dietary composition has a major role in treatment of polycystic ovary syndrome². Females with PCOD should avoid

[a] High carbohydrate food

[b] Foods with white flour

[c] Sodium rich foods

[d] Fatty foods

PCOS Friendly Foods

[a] Whole fruits

[b] Whole non starchy vegetable.

[c] Whole grain products.

[d] High protein foods.

[2] **Exercise:** Exercise is proved to be the best therapeutic and supportive management in PCOS patient³. It has various benefits for PCOS females. Exercise in women with PCOS improves ovarian morphology independent of changes in body composition. Exercise causes.

[a] Increase in Insulin sensitivity.

[b] Checks cholesterol and triglycerides thus controlling metabolic syndrome common in PCOS patients

[c] Increase in endorphins. This alleviates symptoms of depression commonly found in PCOS.

[d] Weight loss

[e] Exercise lowers the risk of heart diseases which is common in PCOS patient.

[3] Medication:

[a] Menstrual Irregularities. Oral contraceptive pills to regularize periods.

[b] Weight gain- Drugs like metformin to increase insulin sensitivity.

[c] Excessive hair growth

[1] Low dose oral contraceptive pills with drospirinone.

[2] If hair growth doesn't stop after 6 months then add on spironolactone (lowers androgens)

[3] Permanent hair removal

[d] Fertility

[1] Ovulation induction by Letrozole (preferably) or gonadotrophins.

[2] Ovarian drilling

[3] IVF

DRUGS FOR PCOS

[1] OCPs: The estrogen component is almost always ethinyl estradiol (EE) in doses ranging from 15-50ug. The progestin component is of variable potency and androgencity. Newer OCPs contain less androgenic progestin such as desogestrol, drospirinone and norgestimate. OCPs with anti-androgen cyproterone acetate are also available.

[2] Insulin sensitizers–N-acetyl cysteine and metformin increase insulin sensitivity, improve testosterone levels N-acetyl cysteine also increase insulin levels. N-acetyl cysteine is much safer and better tolerated than metformin.

[3] Inositol- Inositol is present in 2 forms D-chiroinositol⁴ and myoinositol . Both are capable of improving menstrual irregularities. D-Chiroinostiol is better for reducing testosterone levels while myoinositol is better for metabolic abnormalities as it decreases insulin resistance⁵. Required dose of D-chiroinositol is 1000mg/day in divided dose and dose of myoinositol is 1000mg /day in divided doses. Inositol is given with folic acid, 400 ug/dl.

[4] Vit –D3- Vitamin D3 plays a physiological role in ovarian follicular development and luteinization via altering AMH signalling, FSH

sensitivity and progesterone production in human granulosa cells . Dose of Vit D3 needed is 4000 IU/day for 6 months.

Long Term Complications for PCOS

PCOS has long term complications which are often forgotten and underestimated.

1. During pregnancy gestational diabetes and gestational hypertensive disorders can occur.
2. At an older age metabolic diseases such as glucose intolerance, type II diabetes or dyslipidemia can occur.
3. Women with PCOS have increased classical cardiovascular risks and increased subclinical cardiovascular disease.
4. Endometrial cancer is more frequent in females with PCOS.

Conflict of Interests

The authors declare that they have no competing interests.

REFERENCES

1. Ferriman D, Gallwey JD. Clinical assessment of body hair growth in Females. *J. Clin Endocrinol Metab* 1961, 21: 1440-1447
2. Moran LJ, Ko H, Misso M, Marsh K, Noakes M, Talbot M, Frearson M, Thondan M, Stepto N, Teede HJ. Dietary composition in the treatment of polycystic ovary syndrome: a systematic review to inform evidence-based guidelines. *Journal of the Academy of Nutrition and Dietetics*. 2013;113(4):520-45.
3. Shetty D, Chandrasekaran B, Singh AW, Oliverraj J. Exercise in polycystic ovarian syndrome: An evidence-based review. *Saudi Journal of Sports Medicine*. 2017;17(3):123.
4. Pizzo A, Laganà AS, Barbaro L. Comparison between effects of myo-inositol and D-chiro-inositol on ovarian function and metabolic factors in women with PCOS. *Gynecological Endocrinology*. 2014;30(3):205-8.
5. Laganà AS, Barbaro L, Pizzo A. Evaluation of ovarian function and metabolic factors in women affected by polycystic ovary syndrome after treatment with D-Chiro-Inositol. *Archives of Gynecology and Obstetrics*. 2015;291(5):1181-6.
6. Irani M, Merhi Z. Role of vitamin D in ovarian physiology and its implication in reproduction: a systematic review. *Fertility and Sterility*. 2014;102(2):460-8.